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HOUSE OF REPRESENTATIVES (National
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**STATEMENT OF
STUART J. EVANS
DIRECTOR OF PROCUREMENT
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
BEFORE
THE COMMITTEE ON SCIENCE AND TECHNOLOGY
U.S. HOUSE OF REPRESENTATIVES**

JANUARY 26, 1982

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE:

WE APPRECIATE THE OPPORTUNITY TO APPEAR BEFORE YOU TODAY AND CONTRIBUTE TO YOUR REVIEW OF H.R. 4326, THE SMALL BUSINESS INNOVATION DEVELOPMENT ACT, AS REPORTED BY THE HOUSE COMMITTEE ON SMALL BUSINESS ON NOVEMBER 20, 1981. YOU HAVE FURTHER INVITED US TO COMMENT UPON S. 861, THE SENATE COUNTERPART MEASURE, PASSED ON DECEMBER 8, 1981, AND WE SHALL BE PLEASED TO DO SO.

BY LETTER OF JANUARY 22, 1982, WE HAVE PROVIDED THE COMMITTEE WITH ALL PREVIOUS NASA TESTIMONY ON THE SUBJECT MATTER OF THESE BILLS AND COMMENTED GENERALLY UPON THE IMPACT SUCH BILLS WILL HAVE UPON THE AGENCY. ACCORDINGLY, TODAY, WE WILL PRIMARILY ADDRESS THOSE MATTERS WHICH YOUR INVITATION OF JANUARY 6, 1982, CONTAINED AND ATTEMPT NOT TO DUPLICATE OUR PREVIOUS COMMENTS TO YOU.

NASA HAS REPEATEDLY ENDORSED THE OBJECTIVES OF THESE BILLS, AND THEIR PREDECESSORS, AND DOES SO AGAIN TODAY. OUR CONCERNS, IN THE PAST, HAVE DEALT WITH THE MANNER THESE OBJECTIVES WOULD BE ATTAINED AND MOST OF THOSE CONCERNS ARE STILL PRESENT IN H.R.

4326. WE DO ENDORSE S. 881 AS SUPPORTED BY THE PRESIDENT IN HIS LETTER TO SENATOR RUDMAN ON OCTOBER 6, 1981.

BOTH BILLS WOULD CREATE A MAJOR NEW SMALL BUSINESS PROGRAM, OF AN EXPANDING NATURE ON A CONTINUING BASIS. NEITHER BILL AUTHORIZES ANY APPROPRIATIONS FOR THIS PROGRAM EXECUTION BUT RATHER DIRECTS THE REALLOCATION OF FUNDS CURRENTLY AUTHORIZED/APPROPRIATED FOR OTHER PURPOSES TO BE USED EXCLUSIVELY FOR THIS SBIR PROGRAM. BOTH BILLS STIPULATE THAT CURRENT APPROPRIATIONS REALLOCATED IN THIS MANNER SHALL BE USED ONLY FOR THE SBIR PROGRAM. HOWEVER, BOTH BILLS INTEND THAT THE FUNDS SHALL BE EXPENDED CONSISTENT WITH THE AGENCY'S ESTABLISHED R&D MISSION.

WE BELIEVE THAT THE REVIEW OF H.R. 4326 BEING UNDERTAKEN IS PARTICULARLY RELEVANT SINCE, AS NASA'S AUTHORIZING COMMITTEE, YOU HAVE A UNIQUE INSIGHT INTO THE AGENCY'S MISSION AND PROGRAMS WHICH, AFTER DUE AND DELIBERATE CARE, YOU AUTHORIZE EACH YEAR. IN OUR JUDGMENT, THIS COMMITTEE IS IN AN OUTSTANDING POSITION TO ASSESS THE IMPACT UPON NASA OF THE BROAD LEVY H.R. 4326 WOULD IMPOSE ON THE AERONAUTICS AND SPACE AUTHORIZATIONS YOU RECOMMEND, AND TO WEIGH THE VALUE OF SUCH A LEVY ALONGSIDE THE SUBSTANTIAL PROGRAMMATIC AUSTERITY INHERENT IN THE ADMINISTRATION'S INITIATIVES FOR REDUCING THE FEDERAL BUDGET. WE FURTHER BELIEVE THAT THIS COMMITTEE MAY WISH TO CONSIDER THE MAGNITUDE OF THE

PROGRAM PROPOSED BY H.R. 4326 IN TERMS OF POTENTIAL CHANGES IT MAY MAKE IN THE WAY NASA CARRIES OUT ITS MISSION.

TURNING TO THE SPECIFIC MATTERS YOU REQUESTED US TO ADDRESS, I SHALL ENDEAVOR TO RESPOND TO THEM IN THE SAME ORDER IN WHICH THEY WERE POSED.

SECTION 2b OF THE BILL STATES ITS PURPOSES AS:

"(1) TO SIMULATE TECHNOLOGICAL INNOVATION;

(2) TO USE SMALL BUSINESSES TO MEET FEDERAL RESEARCH AND DEVELOPMENT NEEDS; AND

(3) TO INCREASE PRIVATE SECTOR COMMERCIALIZATION INNOVATIONS DERIVED FROM FEDERAL RESEARCH AND DEVELOPMENT."

THE HOUSE COMMITTEE REPORT 97-349 FURTHER ADDRESSES THE PURPOSES BY STATING "IT IS AIMED AT STIMULATING INNOVATION IN GENERAL AND AT STIMULATING THE TECHNOLOGICALLY AND INNOVATIVELY ORIENTED SMALL BUSINESS SECTOR." THESE PURPOSES WOULD BE ACCOMPLISHED THROUGH "FUNDING AGREEMENTS" UNDER THE VARIOUS AGENCY SBIR PROGRAMS. WHILE THE BILL DEFINES "FUNDING AGREEMENT" IN SECTION 4(e)(2) AS MEANING "ANY CONTRACT, GRANT OR COOPERATIVE AGREEMENT ENTERED INTO BETWEEN ANY FEDERAL AGENCY AND ANY SMALL BUSINESS FOR THE PERFORMANCE OF EXPERIMENTAL, DEVELOPMENTAL OR RESEARCH WORK FUNDED IN WHOLE OR IN PART BY THE FEDERAL GOVERNMENT." OUR INTERPRETATION OF ITS STIMULATION PURPOSES

SUGGESTS THAT, PURSUANT TO P.L. 95-224, THE FEDERAL GRANT AND COOPERATIVE AGREEMENT ACT OF 1977, A GRANT INSTRUMENT IS TO BE USED FOR THIS PURPOSE.

SHOULD THE CONGRESS ENACT AN SBIR PROGRAM OF THE APPARENT CHARACTER EMBODIED IN H.R. 4326, AND AMPLIFIED IN HOUSE REPORT 97-349 ACCOMPANYING THE BILL, NASA WOULD MAKE EVERY EFFORT TO EXECUTE WHAT APPEARS TO BE A NEW ASSISTANCE MISSION GROWING TO SOME \$180 MILLION IN THE FOURTH YEAR. SINCE THE LEGISLATIVE HISTORY OF THIS BILL ENVISIONS A THREE HUNDRED FOLD EXPANSION TO ALL MAJOR FEDERAL R&D AGENCIES OF THE CURRENT NATIONAL SCIENCE FOUNDATION GRANT PROGRAM, NASA WOULD HAVE TO ADDRESS SEVERAL QUESTIONS, THE ANSWERS TO WHICH NEED FURTHER STUDY. PUBLIC LAW 95-224, THE FEDERAL GRANT AND COOPERATIVE ACT OF 1977, DEFINES THE FUNDING INSTRUMENTS (I.E., GRANTS, COOPERATIVE AGREEMENTS, CONTRACTS) TO BE EMPLOYED UNDER THE OBJECTIVES OF THE VARIOUS TYPES OF FEDERAL FUNDING ACTIONS. IN THE CASE OF GRANTS, USE OF THIS TYPE OF AGREEMENT IS RESTRICTED TO THE ACCOMPLISHMENT OF A PUBLIC PURPOSE OF SUPPORT OR STIMULATION AUTHORIZED BY FEDERAL STATUTE WITH MINIMAL GOVERNMENTAL INVOLVEMENT ENVISIONED AND NO DIRECT BENEFIT TO THE GOVERNMENT EXPECTED. NASA, ON A VERY LIMITED BASIS, MAKES USE OF THE GRANT INSTRUMENT ONLY WITH UNIVERSITIES AND NONPROFIT RESEARCH ORGANIZATIONS TO INCREASE BASIC KNOWLEDGE AND UNDERSTANDING IN AERONAUTICS OR SPACE.

BY CONTRAST, THE NATIONAL SCIENCE FOUNDATION (NSF) PROMOTES THE PROGRESS OF SCIENCE AND ENGINEERING THROUGH THE SUPPORT OF RESEARCH AND EDUCATION PROGRAMS. ITS MAJOR EMPHASIS IS ON HIGH QUALITY, SCIENCE-DRIVEN RESEARCH, THE SEARCH FOR IMPROVED UNDERSTANDING OF THE FUNDAMENTAL LAWS OF NATURE, UPON WHICH OUR FUTURE WELL BEING AS A NATION IS DEPENDENT. THE NATIONAL SCIENCE FOUNDATION ALSO SUPPORTS APPLIED RESEARCH IN SEVERAL AREAS. ITS EDUCATIONAL PROGRAMS ARE AIMED AT ENSURING INCREASING UNDERSTANDING OF SCIENCE AT ALL EDUCATIONAL LEVELS AND AN ADEQUATE SUPPLY OF SCIENTISTS AND ENGINEERS TO MEET OUR COUNTRY'S NEEDS. THUS, THE ACTIVITIES OF THE NSF UNDER ITS CURRENT SBIR PROGRAM CLEARLY FALL WITHIN THE SCOPE OF ITS MISSION AND HAVE BEEN SPECIFICALLY AUTHORIZED BY THE CONGRESS.

THE LEGISLATIVE HISTORY OF THE BILL MAKES CLEAR THAT THE SBIR PROGRAM EMBODIED IN H.R. 4326 IS BASED UPON THE CURRENT NSF PROGRAM. SINCE THE NSF HAS LIKEWISE DETERMINED THE GRANT PROCESS TO BE THE APPROPRIATE INSTRUMENT UNDER P.L. 95-224 FOR ITS SBIR PROGRAM, WE CONCLUDE THAT THE PROGRAM ENVISIONED BY H.R. 4326 IS FUNDAMENTALLY AN ASSISTANCE PROGRAM TO SUPPORT RESEARCH CONSISTENT WITH NSF PROGRAMS.

NASA, IN CONTRAST TO NSF, HAS HAD A SPECIFIED MISSION AS SET FORTH IN P.L. 85-568 WHICH IS TO PLAN, DIRECT AND CONDUCT AERONAUTICAL AND SPACE ACTIVITIES. THESE ACTIVITIES ARE PRIMARILY FOR THE DIRECT BENEFIT OF THE GOVERNMENT. EVEN THOUGH

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THE BULK OF NASA'S APPROPRIATIONS ARE COMPOSED OF R&D FUNDS, THOSE FUNDS ARE FOR THE PURPOSE OF ACCOMPLISHING NASA'S MISSION AS PREVIOUSLY IDENTIFIED. THUS, AN SBIR PROGRAM, AS ENVISIONED BY H.R. 4326, IS NOT SO COMPATIBLE WITH NASA'S PRIMARY MISSION AS IT IS WITH NSF'S. H.R. 4326 DOES NOT AUTHORIZE OR REQUIRE THAT ANY NEW FEDERAL MONEY BE AUTHORIZED FOR THIS PROGRAM BUT THAT FUNDS BE REALLOCATED WITHIN EXISTING BUDGETED FUNDS. IT APPEARS THAT EFFORTS OF THE CHARACTER PROPOSED IN THE FIRST PHASE OF THE SBIR PROGRAM UNDER H.R. 4326 WOULD MOST APPROPRIATELY FALL WITHIN THE AMBIT OF AUTHORIZATIONS BY THIS COMMITTEE FOR AERONAUTICAL AND SPACE RESEARCH AND TECHNOLOGY, THE PHYSICS AND ASTRONOMY AREAS OF SPACE SCIENCE, AND SPACE APPLICATIONS, UNDER WHICH MOST OF NASA'S SUPPORTING RESEARCH AND TECHNOLOGY EFFORTS ARE CONDUCTED. HERE, THE DIRECTION OF THIS COMMITTEE IN THE APPLICATION OF AUTHORIZED FUNDS, THE LIMITATIONS OF THE SCHMITT AMENDMENT, AND THE PROVISIONS OF H.R. 4326 MAY COME INTO CONFLICT. WE WOULD HAVE TO LOOK TO THIS COMMITTEE FOR GUIDANCE IN THE MATTER.

FOR THE ABOVE REASONS WE INTERPRET H.R. 4326 TO REQUIRE THAT NASA CREATE A NEW ASSISTANCE PROGRAM FOR SMALL BUSINESS FOR-PROFIT ENTITIES OF SOME \$180 MILLION FOUR YEARS HENCE TO FURTHER OBJECTIVES OF SUPPORT OR STIMULATION AUTHORIZED BY FEDERAL STATUTE RATHER THAN DIRECT BENEFIT TO PRESENT NASA ENDEAVORS. ON THIS BASIS, IT IS PRESENTLY UNCLEAR TO US HOW AN SBIR PROGRAM AS

ENVISIONED BY H.R. 4326 WOULD ASSIST NASA IN CARRYING OUT OUR PRESENT PRIMARY MISSION.

YOU ALSO REQUESTED OUR VIEWS REGARDING THE POTENTIAL OF THIS LEGISLATION FOR INCREASING SMALL BUSINESS PARTICIPATION IN NASA'S RESEARCH AND DEVELOPMENT ACTIVITIES. WE PREVIOUSLY NOTED THAT SMALL BUSINESS CURRENTLY PARTICIPATES IN OUR RESEARCH AND DEVELOPMENT ACTIVITIES TO THE EXTENT OF A QUARTER OF A BILLION DOLLARS ANNUALLY THROUGH DIRECT CONTRACTS WITH NASA. ADDITIONALLY, NASA PRIME CONTRACTORS SUBCONTRACT SOME \$132 MILLION IN RESEARCH AND DEVELOPMENT ANNUALLY WITH THE SMALL BUSINESS COMMUNITY. THIS PROCUREMENT IS IN DIRECT SUPPORT OF AUTHORIZED PROGRAMS AND PROVIDES A DIRECT BENEFIT TO THE GOVERNMENT. ON THE OTHER HAND, THE SBIR PROGRAM CONTEMPLATED BY H.R. 4326 APPEARS TO BE A SUBSTANTIALLY DIFFERENT CHARACTER. HOUSE REPORT 97-349, PART 1, DESCRIBES THE SBIR PROGRAM IN THE FOLLOWING TERMS:

"1. CHARACTER OF THE SMALL BUSINESS INNOVATION RESEARCH PROGRAM

THE KEY ELEMENT IN THE EFFORT TO STIMULATE THE INNOVATIVE POTENTIAL OF SMALL SCIENCE AND HIGH-TECHNOLOGY COMPANIES IS THE SMALL BUSINESS INNOVATION RESEARCH PROGRAM THAT FEDERAL AGENCIES WITH LARGE R&D BUDGETS WOULD BE REQUIRED TO ESTABLISH.

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THE AGENCY SBIR PROGRAMS ARE TO BE MODELED ON THE HIGHLY SUCCESSFUL SMALL BUSINESS INNOVATION RESEARCH PROGRAM AT THE NATIONAL SCIENCE FOUNDATION, DESCRIBED PREVIOUSLY IN THE REPORT. THE GENERAL APPROACH OF THE NSF PROGRAM HAS ALREADY BEEN ADOPTED BY THE DEPARTMENT OF DEFENSE IN ITS SMALL BUSINESS ADVANCED TECHNOLOGY PROGRAM. THE PROGRAM ALSO HAS BEEN ENDORSED BY PRESIDENTS CARTER AND REAGAN.

THE APPLICATION OF THE SBIR PROGRAMS TO FEDERAL AGENCIES IS STRAIGHT FORWARD. ANY AGENCY WHOSE TOTAL R&D BUDGET EXCEEDS \$100 MILLION ANNUALLY WOULD BE REQUIRED TO ESTABLISH A PROGRAM TO ASSIST SMALL BUSINESS IN OBTAINING A MORE EQUITABLE SHARE OF FEDERAL R&D EXPENDITURES. THE BILL WOULD USE THE SAME DEFINITION OF 'RESEARCH', AND 'RESEARCH AND DEVELOPMENT' THAT IS USED IN THE OFFICE OF MANAGEMENT AND BUDGET CIRCULAR A-11, SECTION 44. THIS IS THE DEFINITION AGENCIES CURRENTLY USE IN REPORTING TO OMB.

THE BILL WOULD DEFINE FEDERAL AGENCY IN A WAY THAT DIFFERS FROM THAT USED FOR OTHER SMALL BUSINESS ADMINISTRATION PROGRAMS. THE COMMITTEE FEELS THAT A SEPARATE DEFINITION IS NECESSARY TO ENSURE THAT THE BROADEST APPLICATION OF 'AGENCY' WITH TITLE 5 OF THE UNITED STATES CODE WOULD BE USED. IN ADDITION, THE BILL WOULD PROVIDE THAT WORK UNDER SBIR PROGRAMS MAY BE CONDUCTED THROUGH CONTRACTS, GRANTS OR COOPERATIVE AGREEMENTS.

A. PROGRAM PHASES

THE BILL DEFINES THE SMALL BUSINESS INNOVATION RESEARCH PROGRAM AND DESCRIBES THE PROGRAM'S THREE PHASES. FOR PURPOSES OF THIS BILL, LANGUAGE DESCRIBING THE FIRST PHASE OF THE SBIR PROGRAM HAS BEEN CHANGED FROM REQUIRING PHASE I PROPOSALS TO BE EVALUATED ACCORDING TO 'TECHNICAL AND ECONOMIC FEASIBILITY' TO REQUIRING THAT THEY BE JUDGED PRINCIPALLY UPON THEIR 'SCIENTIFIC AND TECHNICAL MERIT.' PHASE I IS OFTEN TOO EARLY TO ACCURATELY EVALUATE ECONOMIC FEASIBILITY IN R&D EFFORTS. PHASE II, HOWEVER, CAN INTRODUCE BOTH TECHNICAL AND ECONOMIC FEASIBILITY FOR GOVERNMENT NEEDS. FURTHER, THE COMMERCIAL POTENTIAL OF PROPOSALS IS ASSESSED EFFECTIVELY AT THE SECOND PHASE THROUGH THE FOLLOW-ON FUNDING COMMITMENT.

THE MOST SCIENTIFICALLY AND TECHNICALLY FEASIBLE PROPOSALS WOULD BE AWARDED SMALL GRANTS (\$30,000-\$50,000) IN PHASE I TO FUND A FEASIBILITY RESEARCH OR R&D EFFORT. THOSE PROJECTS JUDGED MOST PROMISING IN THE FIRST PHASE COULD THEN QUALIFY FOR A SECOND PHASE OF FUNDING (WHICH CURRENTLY RANGES FROM \$100,000-\$500,000). NOT ONLY DOES THE FEDERAL GOVERNMENT OBTAIN THE FREE USE OF ANY INVENTION DEVELOPED, BUT IT ALSO OBTAINS TAX REVENUE RESULTING FROM COMMERCIALIZATION OF ANY SUCH PATENTED INVENTION BY THE R&D RECIPIENT.

COMMERCIALIZATION OF THE RESULTS OF THE R&D WOULD BE LEFT IN MOST CASES TO THE PRIVATE SECTOR UNDER PHASE III. THE DEFINITION OF THE THIRD PHASE WAS CHANGED TO CLARIFY THE COMMITTEE'S INTENT

THAT THE FUNDING OF THIS PHASE NOT BE REQUIRED, BUT THAT PROPOSALS WITH COMMITMENTS FOR FOLLOW-ON PRIVATE FUNDING TO PURSUE COMMERCIAL APPLICATIONS RECEIVE EXTRA CONSIDERATION IN THE EVALUATION PROCESS. THE COMMITTEE ALSO WANTED TO CLARIFY ITS INTENT THAT FOLLOW-ON PRODUCTION CONTRACTS MAY BE COMPETITIVELY PROCURED, AND ADDED LANGUAGE TO THIS EFFECT."

THE WEIGHT OF OUR EXPERIENCE WITH SMALL BUSINESS LEADS US TO HAVE THE FOLLOWING RESERVATIONS AS TO THE POTENTIAL INHERENT IN H.R. 4326 FOR INCREASING SMALL BUSINESS PARTICIPATION IN NASA'S RESEARCH AND DEVELOPMENT ACTIVITIES AND TO DERIVE RESEARCH AND DEVELOPMENT BENEFITS TO AGENCY APPROVED PROGRAMS COMMENSURATE WITH THE APPROPRIATION EXPENDITURES THE BILL WOULD DIRECT.

THESE RESERVATIONS FALL IN SEVERAL CATEGORIES. FIRST, THE CONGRESSIONAL BUDGET OFFICE ESTIMATES OF APPROPRIATION SET-ASIDES WHICH WOULD BE REQUIRED UNDER THE TWO BILLS, WHEN COMPARED TO THE PRESENT \$5 MILLION NSF SBIP GRANT PROGRAM, GRAPHICALLY PORTRAY THE FIVE YEAR ORDER OF MAGNITUDE EXPANSION ENVISIONED FOR THIS CONCEPT.

FISCAL YEAR	CBO ESTIMATES	
	UNDER S. 881	UNDER H.R. 4326
1962	\$ 75 MILLION	\$ 200 MILLION
1983	205	440

1984	355	955
1985	385	1,545
1986	415	1,665

THE SBIR IS TO BE A NEW PROGRAM OVERLAID ON TOP OF EXISTING AGENCY R&D SMALL BUSINESS PROGRAMS, CONDUCTED IN A DIFFERENT MANNER YET PRESUMABLY TAPPING THE SAME SMALL BUSINESS RESEARCH COMMUNITY. CONSIDERING THE SIZE OF THE FUNDING ACTIONS IN EACH PROGRAM PHASE AS CONTEMPLATED BY THE HOUSE SMALL BUSINESS COMMITTEE, THE PROPOSAL ACTIVITY AND RESULTING FUNDING ACTIONS NECESSARY TO EXECUTE SUCH A SET-ASIDE MANDATE CANNOT BUT IMPACT EXISTING AGENCY SMALL BUSINESS PROGRAMS IN WAYS IT IS DIFFICULT TO SEE. WE BELIEVE THE MORE MODEST YET SUBSTANTIAL RATES OF SET-ASIDE INCREASE EMBODIED IN S. 881 WOULD PROVIDE FOR A MORE ORDERLY DEVELOPMENT AND APPLICATION OF SUCH AN SBIR CONCEPT ACROSS ALL AGENCIES AND ALLOW A FAIR TEST OF ITS WORTH. ALTHOUGH A RANGE OF OPINIONS EXISTS ON THE MATTER, SUCH A TEST WOULD PROVIDE A FACTUAL BASIS FOR DETERMINING THE EXTENT TO WHICH A SMALL BUSINESS INNOVATION BASE EXISTS TO ABSORB IN A MEANINGFUL WAY THE SUBSTANTIAL AGENCY RESOURCES WHICH WOULD BE DIRECTED SOLELY TO RELIANCE UPON SMALL BUSINESS CAPABILITIES TO FULFILL FEDERAL NEEDS IN A MULTIPLICITY OF DISCIPLINES.

ANOTHER RESERVATION DERIVES FROM THE TECHNICAL CAPACITY OF THE COMMUNITY OF FIRMS THAT WOULD BE INVOLVED IN THE SBIR

PROGRAM. NASA IS PROUD THAT THE SPACE EFFORT HAS BEEN A COOPERATIVE EFFORT WITH INDUSTRY, ESPECIALLY SMALL BUSINESS AND ACADEMIA. THIS COMMITTEE IS WELL ACQUAINTED WITH NASA'S ACCOMPLISHMENTS IN OUR EFFORTS TO SUPPORT THE SMALL BUSINESS COMMUNITY. WE WERE THE FIRST AGENCY TO IMPLEMENT THE PROVISIONS OF P.L. 96-517 PERMITTING SMALL BUSINESS TO RETAIN PATENT RIGHTS ON DISCOVERIES MADE IN THE PERFORMANCE OF FEDERAL CONTRACTS. LONG BEFORE THAT, HOWEVER, THE NASA PROCUREMENT PLANNING AND REVIEW PROCESS LED TO SUBSTANTIAL PARTICIPATION THROUGH SMALL BUSINESS SET-ASIDES, SECTION 8(a) AWARDS, AND SUBCONTRACTING. NOR HAS OUR EFFORT STOPPED WITH THOSE PROGRAMS. NASA ANNUALLY ACQUAINTS SMALL BUSINESS WITH ITS RESEARCH AND TECHNOLOGICAL ACTIVITIES THROUGH A RESEARCH AND TECHNOLOGY OBJECTIVES AND PLANS SUMMARY. IT IS LONG-STANDING NASA POLICY TO ENCOURAGE THE PARTICIPATION OF SMALL RESEARCH FIRMS IN ITS WORK THROUGH THE MEDIUM OF UNSOLICITED PROPOSALS. SMALL BUSINESS ALSO REAPS THE BENEFITS OF NASA'S OPERATION THROUGH THE SEVERAL PARTS OF THE TECHNOLOGY UTILIZATION PROGRAM.

IN SPITE OF OUR PAST ACCOMPLISHMENTS, WE HAVE NO CONCRETE EVIDENCE, AT THIS TIME, OF THE ABILITY OF THAT SEGMENT OF SMALL BUSINESS THAT CONDUCTS RESEARCH AND DEVELOPMENT TO INCREASE ITS CAPACITY OR EXPAND ITS BASE SUFFICIENTLY TO ACCOMPLISH AN SBIR PROGRAM OF THE MAGNITUDE CONTEMPLATED UNDER H.R. 4326. IF R&D AGENCIES BECOME BOUND BY STATUTE TO SET ASIDE A FIXED PERCENTAGE

IF THEIR BUDGETS FOR AN SBIR PROGRAM AND IF THE SMALL BUSINESS COMMUNITY CANNOT PRODUCE SUFFICIENT LEGITIMATE AND FRUITFUL IDEAS TO MERIT AWARDS, THE AGENCIES MAY EITHER HAVE TO SPEND MONEY ON MARGINAL PROJECTS TO MEET A LEGISLATIVE SET ASIDE OR WITNESS THE LOSS OF FUNDS SINCE THE LEGISLATION APPEARS TO LEAVE NO DISCRETION IN THIS MATTER. IN THOSE INSTANCES WHERE AN AGENCY WERE UNABLE TO MEET ITS SBIR SET-ASIDES, CRITICISM COULD BE DIRECTED NOT AT THE QUALITY OF AN AGENCY'S GRANT OR CONTRACT AWARDS BUT RATHER TOWARD THE FAILURE OF THE AGENCY TO EXPEND ALL THE MONEY REQUIRED BY A LEGISLATIVE MANDATE. FURTHERMORE, WHENEVER A "SPEND OR LOSE" CONCEPT IS EMBODIED IN LEGISLATION INVOLVING APPROPRIATIONS, THE POTENTIAL FOR IMPROVIDENT OR MARGINAL OBLIGATIONS CAN BE INCREASED. S. 881, HOWEVER, AT ONE-THIRD THE SCALE OF H.R. 4326, CAN BE ACCOMMODATED AND IS NOT EXPECTED TO PRESENT THE SAME PROBLEMS.

FINALLY, YOU INDICATED AN INTEREST IN ANY OTHER COMMENTS THAT WE MIGHT OFFER ON THIS LEGISLATION. AS WE INDICATED PREVIOUSLY IN THIS STATEMENT, AS WELL AS IN ALL PRIOR STATEMENTS PERTAINING TO THESE BILLS, NASA FIRMLY SUPPORTS THE OBJECTIVES OF THE SEVERAL BILLS INTRODUCED ON THIS SUBJECT. HOWEVER, WE BELIEVE THAT THERE MAY BE MAJOR DIFFICULTIES FOR THE AGENCIES WITH SOME OF THE APPROACHES TAKEN IN H.R. 4326 TO ACCOMPLISH THE PRIMARY OBJECTIVES OF HELPING SMALL BUSINESSES OBTAIN A GREATER PORTION OF THE GOVERNMENT'S R&D REQUIREMENTS. WE THEREFORE ACCEPT YOUR

INVITATION AND OFFER THE FOLLOWING FOR YOUR CONSIDERATION WHEN MAKING PERFECTING AMENDMENTS TO THIS INITIATIVE.

OUR FIRST RECOMMENDATION IS THAT YOU EXTEND TO H.R. 4326 THAT FEATURE OF S. 981 WHICH ELIMINATES THE AGENCIES' IN-HOUSE R&D EFFORT FROM THE COMPUTATIONAL BASE, BECAUSE THAT EFFORT IS USUALLY MANDATED BY CONGRESS TO BE ACCOMPLISHED BY THE AGENCIES AND IS THE TYPE OF EFFORT NOT COMPATIBLE WITH AN SBIR PROGRAM. THIS ACTION WOULD PROVIDE A REALISTIC BASE THAT AGENCIES HAVE AT THEIR DISPOSAL TO AWARD SBIR CONTRACTS OR GRANTS.

H.R. 4326 PROVIDES THAT BOTH THE SMALL BUSINESS ADMINISTRATION AND THE OFFICE OF SCIENCE AND TECHNOLOGY POLICY INDEPENDENTLY SURVEY AND MONITOR THE SBIR ACTIVITIES OF THE PARTICIPATING FEDERAL AGENCIES. WE SEE NO NEED FOR SUCH DUPLICATION. BECAUSE OF ITS SPECIFIC RESPONSIBILITIES FOR THE BALANCE OF FEDERAL SCIENCE PROGRAMS, ITS SCIENTIFIC EXPERTISE, AND ITS ROLE AS ADVISOR TO THE PRESIDENT ON SCIENCE POLICY, WE BELIEVE THE OSTP BETTER QUALIFIED TO PERFORM THIS TASK. THE SBA IS APPROPRIATELY AN ADVOCATE FOR SMALL BUSINESS; ITS MAIN FOCUS IS TO INCREASE THE NUMBERS AND DOLLAR LEVELS OF AWARDS TO SMALL BUSINESS. IT HAS NEITHER THE MANDATE NOR THE EXPERTISE TO PLAY A ROLE IN NATIONAL SCIENCE PROGRAMS OR POLICY.

SECTION 4(j) OF H.R. 4326 PROVIDES THAT SBA, AFTER CONSULTATION WITH OTHER AGENCIES, SHALL ISSUE POLICY DIRECTIVES

RELATED TO THE SBIR PROGRAMS OF THE MISSION AGENCIES. SECTION 3(f) OF S. 881 ASSIGNS A SIMILAR RESPONSIBILITY TO THE OFFICE OF FEDERAL PROCUREMENT POLICY. WE THINK THE OFPP IS THE MORE APPROPRIATE FOR TWO REASONS. FIRST, OFPP IS CHARGED BY P.L. 93-400, AS AMENDED, WITH PROVIDING THE OVERALL LEADERSHIP AND COORDINATION ROLES IN DEVELOPING PROCUREMENT POLICY FOR THE EXECUTIVE BRANCH. SECOND, BECAUSE OF ITS BROADER RESPONSIBILITIES AND ITS RELATIONSHIP TO OTHER UNITS OF THE EXECUTIVE OFFICE OF THE PRESIDENT, THE OFPP SEEMS MORE LIKELY TO SEE THE SBIR PROGRAMS IN THE BROADER CONTEXT OF OVERALL FEDERAL RESEARCH PROGRAMS.

TO DEVELOP AND OPERATE A GREATLY EXPANDED SBIR PROGRAM WOULD REQUIRE MORE PERSONNEL AND FUNDS THAN THOSE ASSOCIATED WITH THE NSF PROGRAM. IN OUR JUDGMENT, THE RESOURCES REQUIRED TO OPERATE NASA'S PROGRAM CANNOT BE ESTIMATED BY EXTRAPOLATING FROM THE NSF CENTRALLY ADMINISTERED EXPERIENCE SINCE ALL NASA CENTERS WOULD BE INVOLVED. OUR LETTER OF JANUARY 22, 1982, DETAILED OUR BEST CURRENT ESTIMATES OF ADMINISTRATIVE COSTS ON THIS BASIS. WE BELIEVE THE COMMITTEE SHOULD WEIGH THESE FACTORS CAREFULLY IN CONSIDERING THE SBIR AS NOW PROPOSED IN H.R. 4326.

NOR DO OUR RESERVATIONS END WITH CONSIDERATION OF THE METHOD OF AWARDING SBIR CONTRACTS. THE SIZE AND NOVELTY OF THE SBIR PROGRAM PROPOSED IN H.R. 4326 DESERVE, WE BELIEVE, SPECIAL CONSIDERATION AS TO THE PERIOD OF ITS EFFECTIVENESS. BOTH NSF

AND DOD PROGRAMS ARE TOO SMALL AND RECENT TO HAVE PRODUCED A CONCRETE RECORD ON WHICH TO BASE AN ACCURATE PREDICTION. FOR THE PRESENT, WE HAVE ONLY A VERY SMALL DATA BASE ON WHICH TO MAKE JUDGMENTS. FOR THIS AND OTHER REASONS, WE BELIEVE A SPECIFIED TRIAL PERIOD IS APPROPRIATE TO ACCUMULATE A VALID DATA BASE.

DURING THE PERIOD WHEN THE SBIR PROGRAM PROPOSED BY H.R. 4326 MATURES INTO A SET-ASIDE PROGRAM OF OVER \$1 BILLION PER YEAR IN INNOVATIVE RESEARCH, IT MAY BECOME APPARENT THAT THE TECHNICAL CAPACITY PRESUMED TO EXIST WITHIN THE SMALL BUSINESS COMMUNITY IS NOT PRESENT OR THAT PREDICTED BENEFITS HAVE NOT MATERIALIZED. WE SUGGEST THAT H.R. 4326 BE AMENDED NOW TO SET A FIVE YEAR REVIEW OF THE OPERATION OF THIS NEW CONCEPT. A REVIEW IN FIVE YEARS WOULD, IN OUR OPINION, ALLOW THE PROGRAM SUFFICIENT TIME TO OPERATE THROUGH SEVERAL CYCLES OF ITS THREE-PHASED FORMAT. WHEN THIS REVIEW IS COMPLETED, CONGRESS WOULD THEN HAVE ADEQUATE DATA FOR JUDGING THE ADVANTAGES OF A GOVERNMENT-WIDE SBIR PROGRAM. IF THE RESULTS FULFILL CONGRESSIONAL EXPECTATIONS THEN, THE PROGRAM COULD BE APPROPRIATELY CONTINUED. ON THE OTHER HAND, SHOULD THE ANTICIPATED BENEFITS NOT MATERIALIZE, THE CONGRESS COULD THEN CONSIDER THE ALTERNATIVE OF AMENDING THE LEGISLATION TO ACHIEVE THE DESIRED OBJECTIVES.

THERE CAN BE NO DOUBT THAT ALL CONCERNED PARTIES WOULD BENEFIT FROM A FIVE-YEAR REVIEW PERIOD. THE AGENCIES WOULD HAVE A CLEAR VIEW OF THE EFFECT NOT ONLY ON THEIR OTHER SMALL BUSINESS

INITIATIVES BUT ALSO ON THEIR RESEARCH AND DEVELOPMENT PROGRAMS. THE GAO COULD LIKEWISE REACH AN INDEPENDENT ASSESSMENT OF THE SBIR PROGRAM'S VALUE TO THE NATION. MORE IMPORTANTLY, THE PRIVATE SECTOR WOULD HAVE HAD TIME TO DEVELOP THE PHASE III IDEAS INTO MARKETING PROGRAMS THAT WOULD BE COMMERCIALY VIABLE AND PRODUCTIVE OF THE TAX REVENUES FORESEEN BY H.R. 4326.

MR. CHAIRMAN, THIS CONCLUDES MY FORMAL STATEMENT. I AM PREPARED TO ANSWER ANY QUESTIONS YOU MAY HAVE REGARDING THE SUBJECT.